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- 1 [Systems Issues: Robotics-based location sensing using wireless ethernet](#)
Andrew M. Ladd, Kostas E. Bekris, Algis Rudys, Lydia E. Kavraki, Dan S. Wallach, Guillaume Marceau
September 2002 **Proceedings of the 8th annual international conference on Mobile computing and networking**

Full text available: pdf(235.70 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

A key subproblem in the construction of location-aware systems is the determination of the position of a mobile device. This paper describes the design, implementation and analysis of a system for determining position inside a building from measured RF signal strengths of packets on an IEEE 802.11b wireless Ethernet network. Previous approaches to location awareness with RF signals have been severely hampered by non-linearity, noise and complex correlations due to multi-path effects, interferenc ...

Keywords: 802.11, localization, mobile systems, probabilistic analysis, wireless networks

- 2 [Health aspects of wireless communication: health and safety associated with exposure to wireless radiation from personal telecommunication base stations](#)

James C. Lin

June 2002 **ACM SIGMOBILE Mobile Computing and Communications Review**, Volume 6
Issue 3

Full text available: pdf(37.04 KB) Additional Information: [full citation](#), [references](#), [index terms](#)

- 3 [Wireless Andrew: building a high speed, campus-wide wireless data network](#)

Bernard J. Bennington, Charles R. Bartel

January 2001 **Mobile Networks and Applications**, Volume 6 Issue 1

Full text available: pdf(159.87 KB) Additional Information: [full citation](#), [references](#), [index terms](#)

Keywords: Andrew, WaveLAN, integration, wireless network

- 4 [Wireless Andrew: experience building a high speed, campus-wide wireless data](#)

network

Bernard J. Bennington, Charles R. Bartel

September 1997 **Proceedings of the 3rd annual ACM/IEEE international conference on Mobile computing and networking**

Full text available:  pdf(1.48 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

5 Research challenges in wireless networks of biomedical sensors

Loren Schwiebert, Sandeep K.S. Gupta, Jennifer Weinmann

July 2001 **Proceedings of the 7th annual international conference on Mobile computing and networking**

Full text available:  pdf(612.60 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Implanted biomedical devices have the potential to revolutionize medicine. *Smart sensors*, which are created by combining sensing materials with integrated circuitry, are being considered for several biomedical applications such as a glucose level monitor or a retina prosthesis. These devices require the capability to communicate with an external computer system (base station) via a wireless interface. The limited power and computational capabilities of smart sensor based biological imp ...

6 Vertical handoffs in wireless overlay networks

Mark Stemm, Randy H. Katz

December 1998 **Mobile Networks and Applications**, Volume 3 Issue 4

Full text available:  pdf(770.58 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

No single wireless network technology simultaneously provides a low latency, high bandwidth, wide area data service to a large number of mobile users. Wireless Overlay Networks – a hierarchical structure of room-size, building-size, and wide area data networks – solve the problem of providing network connectivity to a large number of mobile users in an efficient and scalable way. The specific topology of cells and the wide variety of network technologies that comprise wireless o ...

7 Dynamic channel assignment in wireless communication networks

Anna Haj Hać, Chunlei Haj Mo

March 1999 **International Journal of Network Management**, Volume 9 Issue 1

Full text available:  pdf(359.91 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We propose a new Cochannel information based Dynamic Channel Assignment (CDCA) strategy for small and microcell systems and a new Group Dynamic Channel Assignment (GDCA) strategy which handles multichannel traffic in wireless networks. Copyright © 1999 John Wiley & Sons, Ltd.

8 QoS performance bounds and efficient connection admission control for heterogeneous services in wireless cellular networks

Dongmei Zhao, Xuemin Shen, Jon W. Mark

January 2002 **Wireless Networks**, Volume 8 Issue 1

Full text available:  pdf(277.81 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Quality-of-Service (QoS) performance and connection admission control (CAC) for heterogeneous services in wireless multiple access networks are investigated. The heterogeneous services include constant bit rate (CBR), variable bit rate (VBR) and available bit rate (ABR) services. Multiple access control is handled by a polling-based scheme with non-preemptive priority. Tight delay variation (jitter) bounds for CBR connections and delay

bounds for VBR connections are derived. A CAC scheme based o ...

Keywords: Quality-of-Service, cellular networks, connection admission control, multiple access control, performance bound

9 A call admission and control scheme for quality-of-service (QoS) provisioning in next generation wireless networks

S. K. Das, R. Jayaram, N. K. Kakani, Sanjoy K. Sen
January 2000 **Wireless Networks**, Volume 6 Issue 1

Full text available:  pdf(201.98 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We propose a framework for quality-of-service &QoS; provisioning for multimedia services in next generation wireless access networks. This framework aims at providing a differentiated treatment to multimedia traffic flows at the link layer, which can be broadly classified as real-time &or delay-sensitive; and non-real-time &or delay-tolerant;. Various novel schemes are proposed to support the differential treatment and guarant ...

10 A novel load balancing scheme for the tele-traffic hot spot problem in cellular networks

Sajal K. Das, Sanjoy K. Sen, Rajeev Jayaram
July 1998 **Wireless Networks**, Volume 4 Issue 4

Full text available:  pdf(487.85 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We propose a dynamic load balancing scheme for the tele-traffic hot spot problem in cellular networks. A tele-traffic hot spot is a region of adjacent hot cells where the channel demand has exceeded a certain threshold. A hot spot is depicted as a stack of hexagonal 'Rings' of cells and is classified as complete if all cells within it are hot. Otherwise it is termed incomplete. The rings containing all cold cells outside the hot spot are called 'Peripheral Rings'. Our load balancing scheme ...

11 Analysis of a hybrid cutoff priority scheme for multiple classes of traffic in multimedia wireless networks

Bo Li, Samuel T. Chanson, Chuang Lin
July 1998 **Wireless Networks**, Volume 4 Issue 4

Full text available:  pdf(387.33 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In this paper, we propose and analyze the performance of a new handoff scheme called hybrid cutoff priority scheme for wireless networks carrying multimedia traffic. The unique characteristics of this scheme include support for N classes of traffic, each may have different QoS requirements in terms of number of channels needed, holding time of the connection and cutoff priority. The proposed scheme can handle finite buffering for both new calls and handoffs. Futhermore, we ...

12 Location management for mobile commerce applications in wireless Internet environment

Upkar Varshney
August 2003 **ACM Transactions on Internet Technology (TOIT)**, Volume 3 Issue 3

Full text available:  pdf(630.00 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

With recent advances in devices, middleware, applications and networking infrastructure, the wireless Internet is becoming a reality. We believe that some of the major drivers of the wireless Internet will be emerging mobile applications such as mobile commerce. Although


many of these are futuristic, some applications including user-and location-specific mobile advertising, location-based services, and mobile financial services are beginning to be commercialized. Mobile commerce applications pre ...

Keywords: Mobile commerce, infrastructure dependability, location management, mobile applications, satellites, wireless Internet, wireless LANs, wireless multicast

13 Performance of routing schemes in wireless personal networks

Anna Della Torre Hać, Zhu Della Torre Zhu

March 1999 **International Journal of Network Management**, Volume 9 Issue 2

Full text available:  [pdf\(329.82 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Routing efficiency in wireless communication networks depends critically on the propagation of location information into the network. We propose new dynamic traffic and state-dependent routing algorithms which are suitable for the demands of future wireless personal communications networks. Copyright © 1999 John Wiley & Sons, Ltd.

14 Congestion control in a wireless network

Anna D. Hać

May 1999 **International Journal of Network Management**, Volume 9 Issue 3

Full text available:  [pdf\(170.08 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This article proposes a congestion control model for a wireless network. Wireless communications can cause congestion in a high-speed switching network depending on the volume of calls, their origination and the network architecture. In congested areas where wireless services are extensively used, the switching network can become congested. The proposed congestion control model allows for evaluation of these limitations and for choosing the best possible solution. Copyright © 1999 John ...

15 Exposure in wireless Ad-Hoc sensor networks

Seapahn Meguerdichian, Farinaz Koushanfar, Gang Qu, Miodrag Potkonjak

July 2001 **Proceedings of the 7th annual international conference on Mobile computing and networking**

Full text available:  [pdf\(476.79 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Wireless ad-hoc sensor networks will provide one of the missing connections between the Internet and the physical world. One of the fundamental problems in sensor networks is the calculation of coverage. Exposure is directly related to coverage in that it is a measure of how well an object, moving on an arbitrary path, can be observed by the sensor network over a period of time.

In addition to the informal definition, we formally define exposure and study its properties. We have devel ...

16 Exposure in wireless sensor networks: theory and practical solutions

Seapahn Megerian, Farinaz Koushanfar, Gang Qu, Giacomino Veltri, Miodrag Potkonjak

September 2002 **Wireless Networks**, Volume 8 Issue 5

Full text available:  [pdf\(294.60 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Wireless ad hoc sensor networks have the potential to provide the missing interface between the physical world and the Internet, thus impacting a large number of users. This connection will enable computational treatments of the physical world in ways never before possible. In this far reaching scenario, Quality of Service can be expressed in terms of accuracy and/or

latency of observing events and the overall state of the physical world. Consequently, one of the fundamental problems in sensor n ...

Keywords: coverage, exposure, network, sensor, wireless

17 User mobility profile prediction: an adaptive fuzzy inference approach

Xuemin Shen, Jon W. Mark, Jun Ye
November 2000 **Wireless Networks**, Volume 6 Issue 5

Full text available:  pdf(213.04 KB) Additional Information: [full citation](#), [references](#), [index terms](#)



18 Assessment of the potential risk for humans exposed to millimeter-wave wireless LANs: the power absorbed in the eye

P. Bernardi, M. Cavagnaro, S. Pisa
November 1997 **Wireless Networks**, Volume 3 Issue 6

Full text available:  pdf(1.69 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper deals with the interaction between a millimeter-wavelength plane wave and the human eye. The study has been conducted utilizing the finite difference time domain (FDTD) numerical technique, and an accurate eye model obtained through photographic images of the human head. A partly automatic procedure has been developed to obtain the FDTD-compatible eye model. The dielectric properties of the human tissues at millimeter wavelengths have been extrapolated from experimental data avai ...



19 Enhanced reserved polling multiaccess technique for multimedia personal communication systems

Benny Bing, Regu Subramanian
May 1999 **Wireless Networks**, Volume 5 Issue 3

Full text available:  pdf(212.85 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This article describes a multiaccess technique which allows the transport of multimedia information across global personal communication systems (PCS). Impressive growth in the application of wireless technologies to telecommunications has sparked active research on a new generation of mobile radio networks projected to handle heterogeneous traffic types. One of the key requirements of these advanced systems is the multiaccess protocol which must guarantee quality of service and provide eff ...



20 Mobility: The shared wireless infostation model: a new ad hoc networking paradigm (or where there is a whale, there is a way)

Tara Small, Zygmunt J. Haas
June 2003 **Proceedings of the 4th ACM international symposium on Mobile ad hoc networking & computing**

Full text available:  pdf(389.27 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In wireless ad hoc networks, capacity can be traded for delay. This tradeoff has been the subject of a number of studies, mainly concentrating on the two extremes: either minimizing the delay or maximizing the capacity. However, in between these extremes, there are schemes that allow instantiations of various degrees of this tradeoff. *Infostations*, which offer geographically intermittent coverage at high speeds, are one such an example. Indeed, through the use of the *Infostation* ne ...

Keywords: SWIM, ad hoc, animal tag, capacity-delay tradeoff, disease model, infostation, network



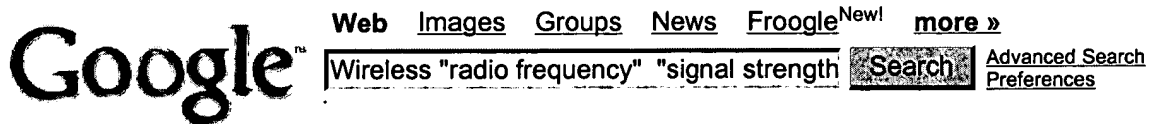
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